



# News Release

## Defense Advanced Research Projects Agency

*"Providing technological innovation for national security for over 40 years."*

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IMMEDIATE RELEASE

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### DARPA PLANS MAJOR CONFERENCE FOR MARCH 2004

**Feb. 23 – UPDATED INFORMATION - Registration for the conference has reached capacity. No further registrations will be accepted.**

The Defense Advanced Research Projects Agency (DARPA) is making final preparations for its 23<sup>rd</sup> Systems and Technology Symposium, *DARPA Tech 2004 "Bridging the Gap,"* to be held March 9 through 11, 2004, at the Anaheim Marriott, Anaheim, Calif.

The symposium is designed to present DARPA briefings on future business opportunities. Each of the nine DARPA technical offices will spend 60 to 90 minutes outlining the office's technical thrusts and areas where new technical ideas are needed. The symposium schedule includes opportunities for firms to have private discussions with DARPA program managers, as well as 30-minute question and answer sessions. There will be an exhibit area in the hotel where each DARPA technical office will showcase technologies from current DARPA programs.

DARPA Director Anthony J. Tether, will begin the symposium with a presentation on DARPA's technology focus areas and opportunities for firms to do business with DARPA.

Presentations by the Tactical Technology Office follow Dr. Tether's presentation. The office's presentations will focus on the battlefield of the future, including a discussion of technologies to enable autonomous ground systems to learn new locomotion and navigation strategies and a briefing on hypersonic systems, including propulsion, high temperature materials, optimizing flight trajectories, flight control algorithms and dynamics. This office will also focus on technologies for urban operations, such as precision area and point weapons, non-lethal technologies, and technologies to provide improved survivability and mobility in urban terrain.

The Special Projects Office's presentations follow those of the Tactical Technology Office. The talks will discuss chemical, biological, radiological defenses, technologies to counter underground facilities, precise navigation without the use of GPS signals and tailored tactical surveillance from space and airborne systems. An additional talk will cover assured urban operations needs such as the ability to create maps of building interiors before entry and defenses against improvise explosive devices, rocket-propelled grenades and suicide bombers.

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Next, the Virtual Space Office presents its topics. DARPA has a major research focus on space technologies and systems. The focus spans multiple technology areas and disciplines. DARPA manages this focus area by using a “virtual office” concept where program managers from different offices work together in what is known as the Virtual Space Office. The Virtual Space Office will speak to technologies and systems that provide improved access to space; space infrastructure necessary for autonomous operations in space; and, greatly improved space situational awareness; and enabling technologies for future space systems.

The second day will open with topics of interest to the Information Exploitation Office, including optical and radar sensing and exploitation, stand-off intelligence, surveillance and reconnaissance capabilities and systems to permit precise identification and persistent and automatic tracking of targets. The office will also discuss future sensor and visualization concepts for the dismounted warfighter and transformational battle command systems.

Next on the agenda will be the Advanced Technology Office, which focuses on enabling network centric warfare. Briefers will outline future opportunities and challenges for adaptive, secure, interoperable network architectures and accompanying protocols; communications layers that are robust, reliable, responsive and seamless; and robust information assurance through new techniques for low probabilities of detection and intercept, trustworthy foundations, novel computing architectures and autonomic vigilance. The second part of this office’s block of time will focus on a new vision for warfighting in the littoral, maritime systems for persistent surveillance, and ideas for swarms of unmanned systems.

The Information Processing Technology Office’s presentations will focus on cognitive information processing systems and the underlying technology developments necessary to bring the vision of more robust, reliable, and secure computing systems to reality. Key investment areas include machine learning and reasoning, that is, creating computers that can operate as personalized “assistants” that learn and reason in ways similar to how humans learn and reason. The office will also discuss their interest in networks that automatically learn and reason about their state and can perform some of the management tasks now done manually by humans, and computing systems that are more aware of and able to monitor their own security.

The Microsystems Technology Office kicks off the last day of presentations with their focus on the next DARPA revolution – the move beyond today’s integrated circuit to integrated microsystems. Their talks will discuss advanced nano-systems and devices that will break through the limits of today’s electronics, systems that will use photonics in radically new ways, and the application of microelectromechanical systems to new mechanical and non-electrical systems. The office is also interested in tapping the as yet-untapped terahertz region for imaging systems, high-frequency low-power devices and electronics applications, as well as ideas for advanced design and fabrication tools for affordable, small volume production..

The Defense Sciences Office’s presentations will include discussions of new materials, including animated materials and biofabrication, and technologies that take advantage of quantum states and non-equilibrium materials. The office will outline new applied mathematics interests, and technologies that allow warfighters to maintain peak combat performance, improve disease resistance, and radically enhance recovery from battlefield injuries. New ideas for training warfighters, and better methods to understand and improve the performance of small teams of warfighters are also of interest for the office.

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DARPA's newest office, the Joint Unmanned Combat Air Systems Office, will close out *DARPA Tech* on Thursday afternoon. This talk will outline the vision of a common operating system and sensors that allow multiple manned and unmanned air vehicles to interoperate, collaborate and work as a team to provide a versatile, multi-mission capability.

During the three-day symposium, invited speakers will provide attendees with insights in the technology needs of U.S. warfighters. Invited speakers include: Secretary of the Air Force James G. Roche; U.S. Army Chief of Staff General Peter J. Schoomaker, USA; Commander, U.S. Special Operations Command General Bryan D. Brown, USA; Commander, U.S. Strategic Command Admiral James O. Ellis, Jr., USN; and Director of Defense Research and Engineering Ronald M. Sega.

Following *DARPA Tech*, DARPA will host the *DARPA Grand Challenge*, at Barstow, Calif. Up to 25 fully autonomous ground vehicles will vie for a \$1 million prize by successfully traveling from Barstow, Calif., to the Las Vegas area. The vehicle that is able to traverse the difficult course in the least amount of time within the allotted 10 hours, at all times navigating autonomously and avoiding obstacles, will win the \$1 million prize. Additional information on the DARPA Grand Challenge is available at <http://www.darpa.mil/grandchallenge/>.

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Media with questions, please contact Jan Walker, (703) 696-2404, or [jwalker@darpa.mil](mailto:jwalker@darpa.mil).  
Conference briefings and exhibits are open to media coverage.

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